

REMARKS

This amendment is made to place the various claims in clear condition for allowance, or in the alternative, in better condition for appeal. Applicant continues to traverse the rejections for reasons previously set forth in the prosecution of this application. However, in an effort to expedite the examination of this application, Applicant has amended each of the independent claims to more clearly define over the cited art.

Specification

The specification has been amended to correct typographical errors noted therein.

Claim Amendments Supported by Original Specification

The amendments made to the claims are fully supported by the original application, and therefore add no new matter to the application, or any issues under 35 U.S.C. § 112. In this regard, the defining features relating to the interface and recovery models are clearly supported by the portion of the original specification from page 5, line 1, through page 6, line 10. The defining features related to the distortion of the image being caused by the mixing of CCD sensor outputs is clearly supported by p. lines 17-23, as well as FIG. 2. This applies to the amendments to the independent claims, as well as new claim 19.

Finally, new claims 17 and 18 are clearly supported by the paragraph at page 7, lines 17-23, and step 73 of Figure 7A.

As set forth the Advisory Action, the Advisory Action stated:

The Examiner notes that Fiete discloses an interference model that uses brightness in column 4 lines 1-55 discloses using brightness. Also the Examiner believes that his interpretation of an interference model is a reasonable interpretation. If the Applicant wishes to have a more specific interpretation then he should include that in the claim. Please note that examiner was not arguing that Interference model did not have any limitations in the independent claim. Rather the Examiner was only mentioning that an interference model can be read broadly even with the limitations in the independent claim. Also the Examiner believes that the Applicant should further define "corresponding" if he wishes to have the limitation as argued in the remarks.

Applicant has done this in the foregoing amendments. Specifically, as amended, the independent claims recite:

1. A method for building a recovery model, the recovery model being used to reduce a zipper of image data, said method comprising:
 - producing a plurality of outputted signals according to a plurality of brightness, wherein the brightness are not all the same;
 - measuring a plurality of differences according to the outputted signals and a plurality of estimated signals corresponding to the brightness, wherein the plurality of estimated signals vary in magnitude in relation to the brightness intensity;
 - establishing an interference model according to the differences, wherein the interference model is a mathematical model that describes an effect of distortion on a real signal caused by a mixing of outputs from a first image sensor and a second image sensor;
 - producing the recovery model according to the interference model, such that the recovery model is a mathematical inverse of the interference model; and
 - applying the recovery model to the a distorted signal to generate a recovered signal, wherein the recovered signal has reduced zipper of the image data.
5. A method for improving a quality of digital image data through a recovery model, the method comprising:
 - receiving a pixel data of the digital image data;

calculating the pixel data by the recovery model according to a difference of the pixel data and at least one adjacent pixel data, wherein the recovery model is a mathematical inverse of a model that describes an effect of distortion on a real signal caused by a mixing of outputs from a first image sensor and a second image sensor, and

producing a recovered image data from a plurality of calculated pixel data, wherein the quality of the recovered image data is better than that of the digital image data.

11. An apparatus for reducing a zipper of image data, comprising:
a recovery module for storing a plurality of recovery parameters, the recovery parameters are corresponding to the zipper, wherein the recovery model is a mathematical inverse of a model that describes an effect of distortion on a real signal caused by a mixing of outputs from a first image sensor and a second image sensor; and
a processing logic, coupled to the recovery module, for receiving a digital image data, and calculating the digital image data with the recovery parameters to produce a recovered image data, wherein the zipper of the recovered image data is not as serious as that of the digital image data.

(*Emphasis Added*). Independent claims 1, 5, and 11 patently define over the cited art for at least the reason that the cited art fails to disclose the features emphasized above. In this regard, the features underlined above were added in this amendment, and are clearly not taught in Fiete.

In this regard, and as previously discussed in the prosecution of this application, the cited portion of Fiete (col. 4, lines 1-55) merely provides a mathematical explanation of a computation of the difference $\Delta(x,y)$ between **adjacent pixels**, in connection with the phenomenon of streaking in a digital image (because adjacent detectors in the digital sensor have different response curves). Significantly, the cited portion of Fiete provides no relevant teaching of the claimed, interrelated features of “producing a plurality of output signals…”, “measuring a plurality of differences according to the outputted signals **and** a plurality of estimated signals …”, and “establishing an

interference model according to the differences.” For at least these fundamental reasons, the rejection should be overturned.

In addition, and as noted in Applicant after-FINAL response, Fiete teaches nothing relevant to the claimed feature of “producing the recover model according to the interference model.” For at least the foregoing reasons, the rejections of claims 1, 5, and 11 should be overturned.

Second, the FINAL Office Action (see page 3) appears to have given no weight to the fundamental aspect of the claimed embodiment: namely, building a recovery model to be used to reduce a zipper of image data. In this regard, the FINAL Office Action stated that “the body of the claim never refers back to ‘zipper of image’ and therefore this part of the claim is not given weight.” This is improper, as claim preambles are to be given appropriate weight. The Examiner is correct that, when phrases are used in both the preamble and the body of the claim, those phrases definitely limit the claim. However, the claim preamble need not be repeated in the body of the claim to receive patentable weight. In this respect, if the preamble is “necessary to give life, meaning and vitality” to the claim, then the claim preamble should be construed as limiting. *Kropa v. Robie*, 187 F.2d 150, 152, (CCPA 1951). A claim preamble “may entirely fail to supply a necessary element in a combination, yet it may so effect the enumerated elements as to give life and meaning and vitality to them, as they appear in the combination.” *Bell Communications Research*, 34 U.S.P.Q.2d at 1820. In the present situation, the very purpose of the claimed embodiment is to reduce a zipper of image data. As this is fundamental to the claimed embodiment, it was improper to refuse to consider this feature, and it was clearly erroneous to apply the teachings of

Fiete (which reduce or remove columnar streaking) as anticipating the claimed embodiments.

Consistent with the preamble and the purpose of the present invention, however, Applicant has amended the independent claims to further define the recovery model to clearly define over Fiete.

For at lease the foregoing reasons, the rejection of claims 1, 5, and 11 should be overturned. Insofar as all remaining claims depend from these claims, all outstanding rejections should be withdrawn.

A credit card authorization is provided herewith to cover the fees associated with the accompanying RCE application. No additional fee is believed to be due in connection with this submission. If, however, any additional fee is deemed to be payable, you are hereby authorized to charge any such fee to Deposit Account No. 20-0778.

Respectfully submitted,

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